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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID BAGGETT, GREGORY R. GALPERIN, and
CARL G. DEMARCKEN

Appeal 2008-2238
Application 09/431,366[1]
Technology Center 2100

Decided: September 24, 2008

Before HOWARD B. BLANKENSHIP, JAY P. LUCAS, and ST. JOHN COURTENAY III, *Administrative Patent Judges*.

LUCAS, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal from a twice rejection of claims 1 to 32 under authority of 35 U.S.C. § 134. The Board of Patent Appeals and

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[1] Application filed November 1, 1999. The real party in interest is ITA Software, Inc.

Interferences (BPAI) has jurisdiction under 35 U.S.C. § 6(b). An Oral Hearing was held on September 11, 2008.

Appellants' invention relates to a method and apparatus for providing availability information of airline seats; more particularly to a method, system and computer program for updating a cache that holds information on seat availability when necessary because the information in the cache is or may be stale. In the words of the Appellants:

> The inventive features of claim 1 include proactively determining if a stored answer in the cache is stale, the stored answer corresponding to seat availability information for a seat on a mode of transportation, with determining being based on a criterion for seat availability information, which criterion is determined based on needs of a travel planning system that makes queries to the cache for obtaining the seat availability information. The cache manager 150 provides additional processing in order to keep the highest quality information in the cache 152 so that the query responses are as useful as possible. The cache manager 150 can operate when availability queries to the cache 152 are not being made or are not pending, or can operate continually ("in the background" or "as a daemon") independent of the availability queries posed to the cache 152. The cache manager 150 implements a management strategy that is dependant on the availability queries being posed to the cache 152.

(App. Br. 3).

Claim 1 and Claim 30 are exemplary:

1. A method executed on a computer system for managing a cache including entries that correspond to seat availability information, the method comprises:

proactively determining if a stored answer in the cache is stale, the stored answer corresponding to seat availability information for a seat on a mode of transportation, with determining being based on a criterion for seat availability information, which criterion is determined based on needs of a travel planning system that makes queries to the cache for obtaining the seat availability information; and if the stored answer pertaining to seat availability information is stale,

sending an availability query to a source of seat availability information for the mode of transportation based on determining that the answer was stale.

30. A computer implemented method for managing availability information for a seat on mode of transportation, comprises:

determining which entries to add, delete, or update in a cache by monitoring and examining availability queries made to the cache by a travel planning system to determine which instances of transportation have a high demand for availability information;

proactively updating entries in the cache if an instance of transportation is determined to have a higher than average or higher than expected demand.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Khosravi-Sichani	US 5,983,217	Nov. 9, 1999 (filed Mar. 21, 1997)
Mehovic	US 6,122,642	Sept. 19, 2000 (filed Jan. 18, 1996)
Filepp	US 2003/0167307 A1	Sept. 4, 2003 (filed Jul. 15, 1988)

Lynch	US 6,839,679 B1	Jan. 4, 2005 (filed Mar. 18, 1996)
Walker	US 2005/0177402 A1	Aug. 11, 2005 (filed Sept. 4, 1996)

REJECTIONS

R1: Claims 1 to 18 and 30 to 32 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

R2: Claims 3 and 4 stand rejected under 35 U.S.C. § 112 (1) for failing to comply with the enablement requirement. The claims contain subject matter which was not described in the Specification in such a way as to enable one skilled in the art to which it pertains to make or use the invention.

R3: Claims 1, 5, 19, and 23 stand rejected under 35 U.S.C. § 102(e) for being anticipated by Lynch.

R4: Claims 23 and 30 stand rejected under 35 U.S.C. § 102(e) for being anticipated by Walker.

R5: Claims 1 to 3, 5 to 21, and 23 to 32 stand rejected under 35 U.S.C. § 103(a) for being obvious over Mehovic in view of Filepp.

R6: Claims 4 and 22 stand rejected under 35 U.S.C. § 103(a) for being obvious over Mehovic and Filepp and Khosravi-Sichani (Khosravi).

Groups of Claims:

Claims are grouped generally by the rejections. Appertaining to certain arguments, some claims will stand or fall with an exemplary claim, as will be noted in the Analysis section.

Appellants contend that the claimed subject matter is statutory, enabled by the Specification, and not anticipated by Lynch or Walker, or rendered obvious by Mehovic and Filepp together, or in combination with Khosravi, for reasons to be discussed more fully below. The Examiner contends that each of the claims is properly rejected.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Briefs and the Answer for their respective details. Only those arguments actually made by Appellants have been considered in this opinion. Arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived.

We affirm.

ISSUES

The overall issue is whether Appellants have shown that the Examiner erred in rejecting the claims under 35 U.S.C. §§ 101, 112(1), 102(e), and 103(a). Specifically, the issues are:

- Have the Appellants demonstrated that the Examiner erred in rejecting claims 1 to 18 and 30 to 32 as being non-statutory for being drawn to an abstract idea within the meaning of 35 U.S.C. § 101? [R1]
- Have the Appellants demonstrated that the Examiner erred in rejecting claims 3 and 4 for failing to be enabled by the Specification? [R2]
- Have the Appellants demonstrated that the Examiner erred in rejecting claims 1, 5, 19, and 23 for being anticipated under 35 U.S.C. § 102 by Lynch? [R3]
- Have the Appellants demonstrated that the Examiner erred in rejecting claims 23 and 30 under 35 U.S.C. § 102 for being anticipated by Walker? [R4]
- Have the Appellants demonstrated that the Examiner erred in rejecting claims 1 to 3, 5 to 21, and 23 to 32 under 35 U.S.C. § 103(a) for being obvious over Mehovic in view of Filepp? [R5]
- Have the Appellants demonstrated that the Examiner erred in rejecting claims 4 and 22 under 35 U.S.C. § 103(a) for being obvious over Mehovic and Filepp in view of Khosravi? [R6]

FINDINGS OF FACT

In view of the breadth of issues raised in this opinion, the Findings of Fact are discussed with the issues in the Analysis section of the opinion below.

PRINCIPLES OF LAW

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. See *In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

"What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under *§ 103*." *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1742 (2007). To be nonobvious, an improvement must be "more than the predictable use of prior art elements according to their established functions." *Id.* at 1740.

"It is common sense that familiar items may have obvious uses beyond their primary purposes, and a person of ordinary skill often will be able to fit the teachings of multiple patents together like pieces of a puzzle." *KSR Int'l Co. v. Teleflex, Inc*., 127 S. Ct. at 1732 (2007).

In rejecting claims under 35 U.S.C. § 102, "[a] single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation." *Perricone v. Medicis Pharm. Corp.,* 432 F.3d 1368, 1375-76 (Fed. Cir. 2005) (citation omitted).

"The preamble of a claim does not limit the scope of the claim when it merely states a purpose or intended use of the invention." *In re Paulsen*, 30 F.3d 1475, 1479 (Fed. Cir. 1994).

The first paragraph of 35 U.S.C. § 112 requires, among other things, that the specification of a patent enable any person skilled in the art to which it pertains to make and use the claimed invention. Although the statute does not say so, enablement requires that the specification teach those in the art to make and use the invention without "undue experimentation." *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). Whether undue experimentation is required is a conclusion reached by weighing several underlying factual inquiries. *In re Wands*, 858 F.2d at 736 (Fed. Cir. 1988).

"While the preamble is not normally considered part of the claim, it is deemed part of the claims where necessary to breathe 'life and meaning' into the claims." (Emphasis added). *In re Burke Inc.*, 786 F. Supp. 1537, 1541 (quoting *Corning Glass Works v. Sumitomo Electric U.S.A.*, 868 F.2d 1251 (Fed. Cir. 1989). "The effect preamble language should be given can be resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim." *Id.*

References within the statutory terms of 35 U.S.C. § 103 qualify as prior art for an obviousness determination only when analogous to the claimed invention. *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992). Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. *In re Deminski*, 796 F.2d 436, 442 (Fed. Cir. 1986); see also *In re Wood*, 599 F.2d 1032, 1036 (CCPA 1979) and *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

When "non functional descriptive material" is recorded or stored in a memory or other medium (i.e., substrate) it is treated as analogous to printed matter cases where what is printed on a substrate bears no functional relationship to the substrate and is given no patentable weight. *See In re Gulack,* 703 F.2d 1381, 1385 (Fed. Cir. 1983) ("Where the printed matter is not functionally related to the substrate, the printed matter will not distinguish the invention from the prior art in terms of patentability. Although the printed matter must be considered, in that situation it may not be entitled to patentable weight."). *See also Ex parte Curry,* 84 USPQ2d 1272 (BPAI 2005) (nonprecedential) (Federal Circuit Appeal No. 2006-1003, *aff'd* Rule 36 Jun. 12, 2006). The Examiner need not give patentable weight to descriptive material absent a new and unobvious functional relationship between the descriptive material and the substrate. *See In re*

Lowry, 32 F.3d 1579, 1582-83 (Fed. Cir. 1994); *In re Ngai*, 367 F.3d 1336, 1338 (Fed. Cir. 2004).

Laws of nature, physical phenomena and abstract ideas are excluded from patent protection. *Diamond v. Diehr*, 450 U.S. 175, 185 (1981).

The test for statutory subject matter is whether the claimed subject matter is directed to a "practical application," i.e., whether it is applied to produce "a useful, concrete and tangible result." *See State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998).

More than mere abstraction, data structures are specific electrical or magnetic structural elements in a memory. In *In re Lowry,* the data structures provide tangible benefits: data stored in accordance with the claimed data structures are more easily accessed, stored, and erased. The opinion further notes that, unlike prior art data structures, Lowry's data structures simultaneously represent complex data accurately and enable powerful nested operations. In short, Lowry's data structures were found to be physical entities that provide increased efficiency in computer operation. They are not analogous to printed matter. *In re Lowry,* 32 F.3d 1579, 1583 (Fed. Cir. 1994).

"Following the lead of the Supreme Court, this court and our predecessor court have refused to find processes patentable when they merely claimed a mental process standing alone and untied to another category of statutory subject matter even when a practical application was claimed." *In re Comiskey*, 499 F.3d 1365, 1378 (Fed. Cir. 2007).

ANALYSIS

From our review of the administrative record, we find that the Examiner has presented a prima facie case for the rejections of Appellants' claims under 35 U.S.C. §§ 101, 112, 102(e), and 103(a). The prima facie case is presented on pages 3 to 15 of the Examiner's Answer. In opposition, Appellants present a number of arguments.

Arguments with respect to the rejection of claims 1 to 18 and 30 to 32 under 35 U.S.C. § 101

The first argument addresses the issue of statutory subject matter under 35 U.S.C. § 101. The Examiner has concluded that claims 1 to 18 and 30 to 32 are directed to an abstract idea which does not result in a practical application with a useful, concrete and tangible result. Claims 1 and 30 are representative.

The determination of statutory subject matter for methods executed on a computer system is not yet settled into a clear test at this time. A careful analysis of the claims on a case by case basis is required. While *In re Lowry* 32 F.3d 1579, (Fed. Cir. 1994) guides us to give weight to data structures on a computer memory we are also guided to consider further, because all computer programs in a computer memory are not necessarily patentable, as where "the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself." *Gottschalk v. Benson*, 409 U.S. 63, 72 (U.S. 1972). However, the test propounded in

Diamond v. Diehr, 450 U.S. 175 (1981), where the program (and algorithm) was tied to a rubber curing machine, seems to be generally accepted as a minimal standard where the facts allow. In *In re Comiskey* 499 F.3d at 1376 (Fed. Cir. 2007) the standard was reiterated, and we will use that as our guidance: As the PTO notes, "[t]he Supreme Court has recognized only two instances in which such a method may qualify as a section [35 U.S.C. §] 101 process: when the process 'either [1] was tied to a particular apparatus' or [2] operated to change materials to a 'different state or thing.'"[2]

We find that exemplary claims 1 and 30 both are tied to a machine, namely the cache which is loaded with data and updated with new information when the current information grows stale. The Examiner objects that this cache may be implemented in software, and thus not be a machine. (Answer, 17, bottom). However, we find that the cache is either hardware or a combination of software and hardware on which the software is running, and can be considered a machine. Thus, we will follow the ruling of *Diamond v. Diehr*, cited above, and conclude that the claims are linked to a machine, and thus statutory. Like the Court in *Benson*, we do not

[2] We note in passing that the Appellants have relied on *In re Warmerdam*, 33 F.3d 1354 (Fed. Cir. 1994) in their arguments, noting that the machine claim 5 in that case was "clearly directed to statutory subject matter… because it was directed to a machine." (App. Br., 12, middle). A review of the *Warmerdam* case reveals that claim 5 was never rejected under 35 U.S.C. § 101 by the Examiner or the Board, and was decided on grounds involving 35 U.S.C. § 112.

say that this test of being tied to a machine expresses the definitive limits of statutory patentability, but we are convinced that a claim passing that test is squarely, at least for now, within the territory. We agree with Appellants that this rejection under 35 U.S.C. § 101 is in error.

Arguments with respect to the rejection of claims 3 and 4 under 35 U.S.C. § 112(1) [R2]

The Examiner has rejected claims 3 and 4 for failing to comply with the enablement requirement. As best understood, the Examiner reasons that the steps in claims 3 and 4 are really part of what the Examiner understands to be the updating process, which takes place after the determining step. Thus, according to the Examiner, those steps in claims 3 and 4 should not be labeled "wherein determining if the stored answer is stale comprises:…" as they comprise part of a later "updating" process.

First, we agree with the Appellants (App. Br., 14, middle) that the categorization of the steps as part of the update process or as a part of a generalized "determining if the stored answer is stale" is not a question of enablement. Enablement requires that the specification teach those in the art to make and use the invention without "undue experimentation." See *In re Wands* (cited above). Placing steps into one process or the following one is not a question of enablement.

In the Answer, the Examiner does question whether the Specification teaches how to determine if the cache is stale, which may be a question of

enablement. (Answer, 18, middle). However, the discussion in the Specification on page 19 and beyond concerning the cache manager presents a number of ways to support the determination if the cache is stale, thus obviating this interpretation of the rejection.

In short, we agree with the Appellants that the rejection [R2] is in error.

Arguments with respect to the rejection of claims 1, 5, 19, and 23 under 35 U.S.C. § 102(e) [R3]

The Appellants have presented two arguments why the rejection of anticipation over the Lynch reference should not apply to claim 1. The claim requires the step of "proactively determining if a stored answer in the cache is stale, the stored answer corresponding to seat availability information… ." Appellants contend that "Lynch provides a very specific definition of 'inventory information,' at Col. 3, line 64 to col. 4, line 14, which does not appear to include seat availability information." Appellants contend that the inventory information in Lynch is flight, fare and fare rule information, and not seat availability information. (App. Br., 16, middle).

We have reviewed the Lynch reference. Specifically, we note in Lynch various references to seat availability: "[t]he system obtains inventory information, specifying the rates and/or availability of a plurality of travel arrangements, from one or more computer reservation systems." (Col. 2, l. 1). (Emphasis added). "In response to a specific travel itinerary from a customer, the system automatically retrieves the inventory and/or

discount information from the database and determines the lowest-priced, available travel arrangements conforming to the itinerary." (Col. 2, l. 8). (Emphasis added). "The customer reservation systems 24 provide travel service inventory information, such as airline flight, hotel, and rental automobile availability and rates." (Col. 3, l. 66). (Emphasis added). Based on these and numerous other references in Lynch, we do not agree with the Appellants that Lynch does not teach seat availability.

Appellants next contend that the claimed determining if the stored answers in the cache are stale is not based on needs of a travel planning system that makes queries to the cache, but rather the updating is done strictly according to elapsed time. (App. Br., 17, top). The Examiner points out that the elapsed time can be set by the user in accordance with the user's needs. (Lynch, col. 6, l. 7). An example is then given of competing factors that affect that need to update the cached information. In view of this recitation, we cannot agree with the Appellants' contention.

With regard to claim 5, Appellants repeat the argument concerning seat availability not being taught by Lynch. We apply the same reasoning as applied to claim 1, and do not find error in the rejection.

With regard to claim 19, we agree with the Examiner that the argued "managing a cache for predicting availability information" is merely an intended use in the preamble of the claim, and cannot be given patentable weight. We thus do not find error in the rejection of this claim. See *In re Burke* (cited above).

With regard to claim 23, Appellants' first arguments concerning Lynch teaching "seat availability," the same logic applied in claim 1 shall be applied to this claim. The claim requires not that the evaluation of the entries in the cache must be performed on an individual basis, but that the evaluation is in accordance with criteria based on the needs of the system. As discussed above, the criterion of elapsed time is a reasonable basis for declaring information stale, based on the need for current accurate data. We read the "delete or modify the entry" on Lynch's updating process, in the manner described by the Examiner in the Answer, page 25. Again, we find no error in the Examiner's rejection.

Arguments with respect to the rejection of claims 23 and 30 under 35 U.S.C. § 102(e) [R4]

Walker is directed to a novel type of airline ticket in which the airline can specify the departure and arrival times between user-selected cities, and thereby fill empty seats that would otherwise not be sold.

The Examiner has rejected claims 23 and 30 for being anticipated by Walker. With regard to claim 23, Appellants contend that Walker does not teach the claimed limitation "manage a quality level of the entries of seat availability information in the cache … based on the need of a travel planning system." (App. Br., 21, middle). More specifically, Appellants contend that Walker does not describe a cache system that holds seat availability information. (*Id.*).

In answer, the Examiner points to Walker ¶[0048], which describes flight schedule database 240 and a seat allocation database 245, the latter of which "contains available inventory for each fare class on a given flight." In ¶[0061] Walker says, "FIG. 8 illustrates an exemplary seat allocation database 245 which maintains available inventory information for each fare class on a given flight offered by the airlines 100, as allocated and updated by the RMS 200." Thus, database 245 serves as the cache as claimed. The updating specified in the patent is read on the deletions and modifications to database 245, anticipating the limitations in the claims. We note that the RMS serves as a source of the updated information, but is not the cache itself, as is argued by the Appellants (App. Br., 22, middle).

Appellants' argument with regard to claim 30 focuses on the last limitation, indicating that the cache is updated in the event of "a higher than average or higher than expected demand." The Examiner points to ¶[0078]-[0081] (Answer, 27, middle) where it is taught that the allocations of seats are sensitive to a higher demand, for example during Christmas week.

We thus do not find error in the Examiner's rejection over Walker.

Arguments with respect to the rejection of claims 1 to 3, 5 to 21, and 23 to 32 under 35 U.S.C. § 103(a) [R5]

The patent to Mehovic is directed to a system that converts "transaction processing facility" (TPF) data of an airline computerized reservation system (CRS) to a standardized relational database management

system (RDBMS) to allow for wider distribution of the information. The Examiner states that:

> The difference between Mehovic's system and the claimed invention is that Mehovic uses different cache management algorithm. Mehovic synchronizes the cache 20 with the CRS by propagating data immediately after CRS 12 updates the data or at definable intervals of time (Col. 3 lines 59-65), and therefor does not teach proactively updating the cache based on frequency of access to the cache as claimed. However, Filepp teaches an airline reservation system (page 4 [0052]) utilizing cache storage wherein the objects in caches are proactively updated based on frequency of access to the objects in the caches. [references omitted]

(Answer, 10, middle).

The Examiner indicates that it would have been obvious to combine Filepp's cache management algorithm with Mehovic's CRS system as claimed, to guaranty currency of information to the user. (Filepp, ¶[0821]).

First, we observe that Mehovic addresses improving airline reservation systems, and that Filepp's technique is used with airline reservation data. (Filepp, ¶[0052]). Since both references are addressed to the same field of endeavor as the instant application, they are properly combinable in a rejection under 35 U.S.C. § 103. (*In re* Clay (cited above)). The fact that they address different problems is no barrier to combining their teachings in a rejection. ("It is common sense that familiar items may have obvious uses beyond their primary purposes, and a person of ordinary skill

often will be able to fit the teachings of multiple patents together like pieces of a puzzle." *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. at 1732 (2007).

Claims 1 and 19

With regard to claim 1 (and 19)[3] Appellants contend that the feature of a cache including entries that correspond to seat availability information is not disclosed by Mehovic. (App. Br., 26, bottom). The Examiner argues that it is well known that Sabre is a CRS, and that as a Computerized Reservation System for the airlines the item that is being reserved is a seat on an airline flight. We find that this is a valid inference. The Examiner also concludes that the exact nature of the item being reserved is a matter of non-functional descriptive matter, and cites. *In re Gulack,* 703 F.2d 1385 (Fed. Cir. 1983) and *In re Lowry* 32 F.3d 1579 (Fed. Cir. 1994). (Answer, 29, middle). The existence of the cache is not in question, being #20 (Mehovic, Col. 5, l. 19). Thus, we are sympathetic to the argument that the exact nature of the items stored in the cache, not being tied into the other recited limitations, is indeed non-functional.

The Appellants next argue that the update mechanism of Filepp does not teach or suggest the limitation "with determining … based on a criterion for seat availability information, which criterion is determined based on needs of the travel planning system." (App. Br., 29, middle). As the Examiner points out (Answer, 31) Mehovic teaches updating the cache periodically to keep the data from being stale. (Mehovic, col. 3, l. 62).

[3] App. Br., 24, top.

Filepp has a similar teaching of updating to keep the data fresh in ¶[0821] and following. Note a similar algorithm is used in keeping the most accessed objects in the cache, at ¶[0834], and the use of that algorithm in updating the cache would be obvious.

For the various reasons stated above, we do not find error in the Examiner's rejection of claims 1 and 19 under R5.

Claims 3 and 21

Appellants contend that the Examiner erred in rejecting claims 3 and 21 as Mehovic fails to teach or suggest the recited scheduling of the list of keys. We support the Examiner firstly because Mehovic teaches a data set being updated based on the TPF or at set periods of time. (Col. 3, l. 63). Secondly, we note that the nature of the list of keys is non-functional in these claims, and therefore their nature does not have patentable weight.

Claims 5, 7 to 11, and 23 to 26

Independent claim 5 is drawn to an availability system comprising a cache and a cache manager, as delimited. Concentrating on what was actually argued (e.g. see App. Br., 33, bottom), Appellants argue that Mehovic is directed to a reservation system, not a travel planning system as claimed. As that limitation is in the preamble alone, we cannot give it patentable weight, so we pass on to the next argument.

Appellants contend that the cache with seat availability information is not taught by Mehovic. (App. Br., 34, bottom). This argument was discussed above with regard to claim 1, and for the reasons stated is not convincing.

Appellants further argue that the claimed determination by the cache manager of the needs of the travel planning system, and based on those needs proactively updating the cache, is not taught by the combination of references. (App. Br., 35, bottom). In Filepp, ¶¶ [0822] and [0823], there are described a number of factors which cause more frequent updating of the cache. "The frequency with which the currency of objects is checked depends on factors such as the frequency of updating of the objects." (Filepp, ¶[0823]).

Claim 6

Appellants argue by quoting from Filepp, ¶[0826], that the Least Recently Used (LRU) algorithm of Filepp "ensures that objects that are least frequently used forfeit their storage to objects that are more frequently used." Thus, they say that LRU only addresses retention in the cache, not addition to the cache. The Examiner's logic is much more compelling, indicating that the quote addresses additions to the cache to replace those discarded. (Answer, 34, bottom).

Claims 12 and 27

Representative claim 12 requires that entries to be added, modified or deleted are determined from the "distribution or nature of the availability queries posed to the cache." In Filepp, ¶[0822], there is given an example of increase frequency of checking for updating based on the nature of the queries- news articles are checked often. We find this a basis for holding the claims obvious over the combination of references.

Claims 13 to 16 and 28 to 29

These claims are addressed to the additional limitation of a predictor or model of the seat availability queries, where (in claim 14) the model is based on one of various types of data, including historical data. Studying ¶ [0825] we find that the LRU storage retention model uses historical data to decide which objects should be kept or removed from cache and replaced with updated data to satisfy as many of the queries as possible with accurate information. We find that in predicting the data to be kept, so that queries can be satisfied, the reference provides a teaching or suggestion of predicting the queries that will be made. The methodology is self correcting, comparing the results to the success of the queries. "Over time, the self-configuring stage will have the effect of retaining within local disk storage those objects which the user has accessed most often." (Filepp, ¶[0825]). We conclude that the claims would be obvious over this teaching.

Claim 32

Claim 32 has been rejected for being obvious over Mehovic and Filepp, specifically with regard to the methodology in Filepp as described in ¶[0821] and following. In the Examiner's Answer, page 32, the Examiner has applied the detailed recitation of the updating of the cache in Filepp to the limitations of the claims. We do not find error in this recitation, and of the rejection of claim 32 under 35 U.S.C. § 103.

Arguments with respect to the rejection of claims 4 and 22 under 35 U.S.C. § 35 U.S.C. § 103(a) [R6]

Appellants contend that Examiner erred in rejecting claims 4 and 22 under 35 U.S.C. § 103 for being obvious over Mehovic, Filepp, and Khosravi. Appellants simply state that Khosravi fails to cure the deficiencies in the rejections concerning the references to Mehovic and Filepp. (App. Br., 41; Reply Br., 18). We have reviewed the rejections of parent claims 1 and 19, and do not find deficiencies as expressed above in this opinion. We thus adopt the Examiner's reasoning for this rejection, and do not find it to be in error.

CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude that the Examiner erred in rejecting claims 1 to 18 and 30 to 32 under 35 U.S.C.

§ 101 [R1]. We further conclude that the Examiner erred in rejecting claims 3 and 4 under 35 U.S.C. § 112, paragraph 1, for enablement [R2]. We further conclude that the Examiner did not err in making rejections R3, R4, R5, and R6.

DECISION

R1: The rejection of claims 1 to 18 and 30 to 32 under 35 U.S.C. § 101 for being directed to non-statutory subject matter is reversed.

R2: The rejection of claims 3 and 4 under 35 U.S.C. § 112 (1) for failing to comply with the enablement requirement is reversed.

R3: The rejection of claims 1, 5, 19, and 23 under 35 U.S.C. § 102(e) for being anticipated by Lynch is affirmed.

R4: The rejection of claims 23 and 30 under 35 U.S.C. § 102(e) for being anticipated by Walker is affirmed.

R5: The rejection of claims 1 to 3, 5 to 21, and 23 to 32 under 35 U.S.C. § 103(a) for being obvious over Mehovic in view of Filepp is affirmed.

R6: The rejection of claims 4 and 22 stand rejected under 35 U.S.C. § 103(a) for being obvious over Mehovic, Filepp, and Khosravi-Sichani (Khosravi) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

rwk

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